

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
1 September 2005 (01.09.2005)

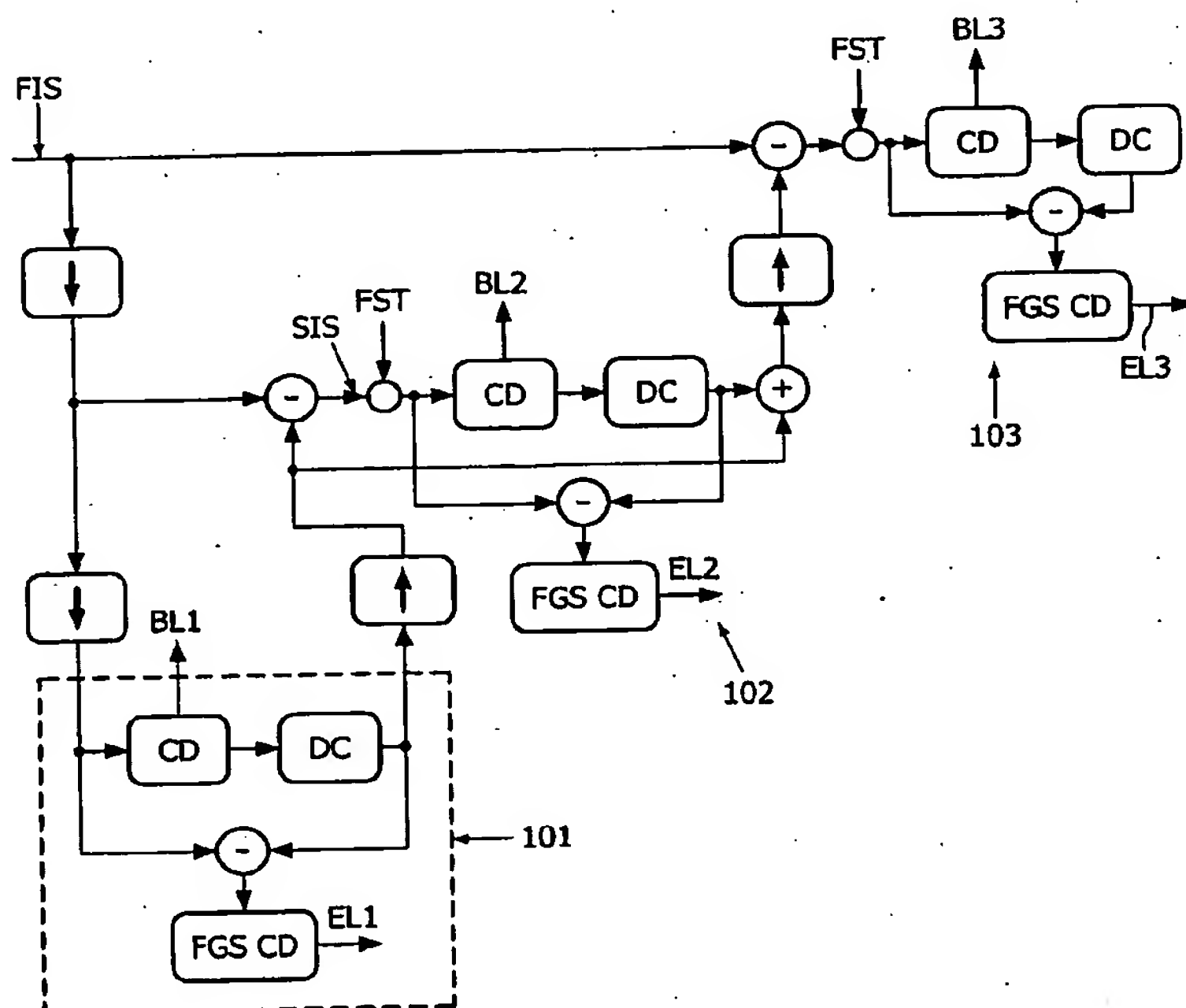
PCT

(10) International Publication Number
WO 2005/081532 A1

- (51) International Patent Classification⁷: **H04N 7/26**, 7/50, 7/46
- (21) International Application Number: **PCT/IB2005/000088**
- (22) International Filing Date: 14 January 2005 (14.01.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 04300033.0 21 January 2004 (21.01.2004) EP
- (71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **KIRENKO, Ihor** [UA/FR]; C/O Société Civile SPID, 156, Boulevard Haussmann, F-75008 Paris (FR).
- (74) Agent: **LANDOUSY, Christian**; Société Civile SPID, 156, Boulevard Haussmann, F-75008 Paris (FR).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: **METHOD OF SPATIAL AND SNR FINE GRANULAR SCALABLE VIDEO ENCODING AND TRANSMISSION**



(57) Abstract: The invention relates to a method of coding video data available in the form of a first input stream of video frames, and to a corresponding coding device. This method, implemented for instance in three successive stages (101, 102, 103), comprises the steps of (a) encoding said first input stream to produce a first coded base layer stream (BL1) suitable for a transmission at a first base layer bitrate; (b) based on said first input stream and a decoded version of said encoded first base layer stream, generating a first set of residual frames in the form of a first enhancement layer stream and encoding said stream to produce a first coded enhancement layer stream (EL1); and (c) repeating at least once a similar process in order to produce further coded base layer streams (BL2, BL3,...) and further coded enhancement layer streams (EL2, EL3,...). The first input stream is thus, for obtaining a required spatial resolution,

compressed by encoding the base layers up to said spatial resolution with a lower bitrate and allocating a higher bitrate to the last base layer and/or to the enhancement which corresponds to said required spatial resolution. A corresponding transmission method is also proposed.

WO 2005/081532 A1



Declaration under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations* AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, *ARIPO patent* (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), *Eurasian patent* (AM,

AZ, BY, KG, KZ, MD, RU, TJ, TM), *European patent* (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), *OAPI patent* (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.